

This listing of claims will replace all prior versions of claims in the Application.

### **Listing of Claims**

Claim 1. (Currently Amended) A method of ~~providing a metal seed layer substantially free of discontinuities disposed on a substrate~~ comprising the steps of contacting a metal seed layer having discontinuities disposed on a substrate having one or more apertures having a size of  $\leq 1\mu\text{m}$  with an alkaline copper electroplating bath comprising copper pyrophosphate to both provide the metal seed layer substantially free of discontinuities and to substantially fill the apertures with copper.

Claim 2. (Original) The method of claim 1 wherein the electroplating bath has a pH of from 8 to 9.

Claim 3. (Original) The method of claim 1 wherein the electroplating bath further comprises a complexing agent.

Claim 4. (Original) The method of claim 1 wherein the electroplating bath further comprises one or more bases selected from ammonium hydroxide or tetra(C<sub>1</sub>-C<sub>4</sub>)alkylammonium hydroxide.

Claim 5. (Currently Amended) The method of ~~claim 1~~claim 18 wherein the electroplating bath further comprises one or more compounds selected from halides, brighteners, suppressors, levelers, grain refiners, wetting agents or surfactants.

Claims 6-7. (Canceled)

Claim 8. (Currently Amended) The method of ~~claim 6~~claim 18 wherein the electroplating bath further comprises a complexing agent.

Claim 9. (Currently Amended) The method of ~~claim 6~~claim 18 wherein the electroplating bath further comprises one or more bases selected from ammonium hydroxide or tetra(C<sub>1</sub>-C<sub>4</sub>)alkylammonium hydroxide.

Claim 10. (Currently Amended) The method of ~~claim 6~~claim 18 wherein the electroplating bath further comprises one or more brightener compounds in an amount of  $\geq 1.5\text{ mg/L}$ .

Claim 11. (Currently Amended) An article of manufacture comprising an electronic device substrate containing one or more apertures having a size of  $\leq 1\mu\text{m}$ , each aperture containing a

seed layer deposit enhanced by ~~contact~~ and substantially filled by electroplating with an alkaline electroplating composition that comprises copper pyrophosphate.

Claim 12. (Canceled)

Claim 13. (Currently Amended) A ~~The method for removing excess material from a semiconductor wafer containing one or more apertures by using a chemical mechanical planarization process which comprises~~ of claim 18 further comprising contacting the ~~semiconductor wafer~~ substrate with a rotating polishing pad thereby removing the excess material from the ~~semiconductor wafer~~; wherein the apertures contain a copper deposit obtained by ~~contact with an alkaline electroplating composition that comprises copper pyrophosphate~~ substrate.

Claims 14-17. (Canceled)

Claim 18. (Previously Presented) A method of manufacturing an electronic device comprising the steps of contacting a metal seed layer having discontinuities disposed on a substrate having one or more apertures having a size of  $\leq 1\mu\text{m}$  with an alkaline copper electroplating bath comprising copper pyrophosphate, subjecting the electroplating bath to sufficient current density to provide a metal seed layer substantially free of discontinuities and to substantially fill the apertures with copper.

Claim 19. (Previously Presented) The method of claim 18 wherein the substrate is an integrated circuit device.

Claim 20. (Previously Presented) the method of claim 18 wherein the electroplating bath has a pH of from 8 to 9.